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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,960	04/13/2004	Pey-Yuan Lee	24061.187 (2003-1398)	3594

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EXAMINER	
HUYNH, ANDY	

ART UNIT	PAPER NUMBER
2818	

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/822,960	LEE ET AL.	
	Examiner	Art Unit	
	Andy Huynh	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7,9 and 23-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *33-38* is/are allowed.

6)☒ Claim(s) *7,9,23-25,27,28 and 30-32* is/are rejected.

7)☒ Claim(s) *26 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is responsive to the Amendment filed on 08/03/06.

In the Amendment, claims **1-6, 8 and 10-22** have been canceled. Claims **7 and 9** have been amended. New claims **26-38** have been added. Accordingly, claims **7, 9 and 23-38** are currently pending in the application.

Response to Arguments

Applicant's arguments with respect to Claims **7, 9 and 23-25, 27, 28 and 30-32** have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

Claim **9** is objected to because of the following reasons.

It is believed that claim **9** depends from claim **7** instead of claim **8** since it has been canceled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims **7, 9, 25, 27, 28 and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Somekh et al. (USP 6,900,135 hereinafter "Somekh") in view of JP63244748 and in view of Kim et al. (USP 6,355,516 hereinafter "Kim") and further in view of Cronin et al. (USP 5,926,738 hereinafter "Cronin").

Somekh discloses in Figs. 1-4 and the corresponding texts as set forth in column 3, line 40-column 6, line 67, a method of manufacturing a microelectronic device, comprising:

performing a first inspection of a device feature/wafer during an intermediate stage of manufacture;

cleaning the device feature/wafer after the first inspection; and

performing a second inspection of the device feature after cleaning the device feature/wafer, wherein the device feature is located in a production region of a wafer.

Somekh does not disclose the wafer further including a calibration region having a calibration feature located therein, wherein the calibration feature comprises a first conductive layer located over the wafer, a buffer layer located over the first conductive layer, and a second conductive layer located over the buffer layer, wherein the first conductive layer comprises AlCu, and wherein the second conductive layer comprises W. JP63244748 teaches that calibration of wafer surface inspection device comprising a calibration region having a calibration located therein to prevent the lowering of the calibration accuracy as set forth in the English Abstract. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to include a calibration region having a calibration located therein on the wafer, as taught by JP63244748 in order to achieve the calibration accuracy.

JP63244748 does not teach the calibration feature comprises a first conductive layer located over the wafer, a buffer layer located over the first conductive layer, and a second conductive layer located over the buffer layer, wherein the first conductive layer comprises AlCu, and wherein the second conductive layer comprises W. Kim teaches in Fig. 1C that a device feature comprises a first conductive layer 12 located over a substrate 11, a buffer layer 13, 14, 15, 16 located over the first conductive layer, and a second conductive layer 17 located over the buffer layer (col. 2, line 40-col. 3, line 14). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to form a calibration/device feature comprises a first conductive layer located over a substrate, a buffer layer located over the first conductive layer, and a second conductive layer located over the buffer layer, as taught by Kim in order to form a device feature as a capacitor. Kim does not teach the first conductive layer comprises AlCu and the second conductive layer comprises W. However, Cronin teaches that connection/conductive lines generally comprise a metal with good conductivity, such as aluminum copper (AlCu) (col. 3, lines 64-66), and a metal conductor comprises W (col. 5, line 17). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to form the first conductive layer comprising AlCu and the second conductive layer comprising W, as taught by Cronin since it is known in the art that aluminum copper (AlCu) is a metal with good conductivity, and W offers lower contact resistance.

Claims **23 and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Somekh et al. (USP 6,900,135 hereinafter "Somekh") in view of JP63244748 and in view of Kim et al. (USP 6,355,516 hereinafter "Kim"), further in view of Cronin et al. (USP 5,926,738

hereinafter "Cronin") and further in view of Iwabuchi et al. (USP 6,512,227 hereinafter "Iwabuchi").

Somekh, JP63244748, Kim and Cronin disclose all the claimed limitations except for at least one of the first and second inspections performed by a scanning electron microscope (SEM). Iwabuchi teaches that as one of apparatuses for observing a sample with an electron beam, there is known a scanning electron microscope (SEM). The SEM is suitable for observing a by restricted field of vision at a high magnification (col. 1, lines 32-39). It would have been obvious to one having ordinary skill in the art at the time of the invention was made to use at least one of the first and second inspections is performed by a scanning electron microscope (SEM), as taught by Iwabuchi since it was known in the art that the SEM is suitable for observing a by restricted field of vision at a high magnification.

Claims **24 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Somekh et al. (USP 6,900,135 hereinafter "Somekh") in view of JP63244748 and in view of Kim et al. (USP 6,355,516 hereinafter "Kim"), further in view of Cronin et al. (USP 5,926,738 hereinafter "Cronin") and further in view of Branco et al. (USP 6,841,008 hereinafter referred to as "Branco").

Somekh, JP63244748, Kim and Cronin disclose all the claimed limitations except for the cleaning comprises exposing the device feature to an oxygen containing plasma. Branco teaches that plasma cleaning with oxygen as a source gas (also referred to "ashing") can remove organic

based materials. At the same time, an oxygen plasma etch can leave quartz surfaces essentially unaltered as set forth in column 4, line 64-column 5, line 1). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to use oxygen plasma for cleaning or etching, as taught by Branco since it was known in the art that oxygen plasma can remove organic based materials, and can leave quartz surfaces essentially unaltered.

Allowable Subject Matter

Claims **26 and 29** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations.

Claims **33-38** are allowed.

Conclusion

Applicants' amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andy Huynh whose telephone number is (703) 305-0089. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Ah

Andy Huynh
Patent Examiner